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MARK D. SARALINO (MEI)
RENNER, OTTO, BOISSELLE & SKLAR, LLP
1621 EUCLID AVENUE
19TH FLOOR
CLEVELAND, OH 44115

EXAMINER	
HOLLWEG, THOMAS A	
ART UNIT	PAPER NUMBER
2879	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/541,924	HORIUCHI ET AL.	
	Examiner	Art Unit	
	Thomas A. Hollweg	2879	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 August 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-13* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-13* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *7/11/2005* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *7/11/2005, 8/14/2006*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statements (IDS) submitted on July 11, 2005, and August 14, 2006, are in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Drawings

2. Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-13 are rejected under 35 U.S.C. 102(e) as being anticipated by Wang, U.S. Patent Application Publication No. 2006/0071585 A1.

5. With regard to claim 1, in figures 7A-C, Wang discloses an energy converter (140) comprising: a heat source (141) for emitting electromagnetic radiations; and a radiation cut portion (144) for cutting down infrared radiations, of which the wavelengths are longer than a predetermined wavelength [0041], wherein the radiation cut portion is a woven or knitted mesh of metal wires (145) (may be formed of metal [0037]), openings (146) of the woven or knitted mesh having an aperture size that is smaller than the predetermined wavelength [0058].

6. With regard to claim 2, in figures 7A-C, Wang discloses that the openings (146) have a substantially square shape, each side of which is shorter than 1 μm [0058].

7. With regard to claim 3, in figures 7A-C, Wang discloses that the metal wires (145) have a diameter of 2 μm or less [0058].

8. With regard to claim 4, in figures 7A-C, Wang discloses that the metal wires (145) are made of a refractory material having a melting point higher than 2,000 K [0037, 0040].

9. With regard to claim 5, in figures 7A-C, Wang discloses that the refractory material is at least one material selected from the group consisting of tungsten, molybdenum, rhenium, tantalum and compounds thereof [0037].

10. With regard to claim 6, in figures 7A-C, Wang discloses that the heat source (141) is made of tungsten or a tungsten compound and operates at a temperature of 2,000 K or more [0040, 0057].

11. With regard to claim 7, in figures 7A-C, Wang discloses that the radiation cut portion (144) is a stack (149) of woven or knitted metal wire (145) meshes, and wherein the stack of woven or knitted meshes is thick enough to limit the emission of the electromagnetic radiations with the predetermined wavelength [0041, 0042, 0058].

12. With regard to claim 8, in figures 7A-C, Wang discloses that the predetermined wavelength is 780 nm (included in disclosed range of 700 nm to 10,000 nm [0041]).

13. With regard to claim 9, in figures 7A-C, Wang discloses a method of making an energy converter (140), the method comprising the steps of: preparing a heat source (141) that emits electromagnetic radiations; preparing a radiation cut portion (144) that cuts down infrared radiations, of which the wavelengths are longer than a predetermined wavelength; and arranging the radiation cut portion (144) such that the radiation cut portion (144) faces at least one side of the heat source (141), from which the electromagnetic radiations are emitted, wherein the radiation cut portion (144) is a woven or knitted mesh of metal wires (145), openings (146) of the woven or knitted mesh having an aperture size that is smaller than the predetermined wavelength [0065-0067].

14. With regard to claim 10, in figures 7A-C, Wang discloses that the method of making an energy converter (140) includes the step of preparing the radiation cut portion (144) including the step of processing the metal wires (145) while applying tensile stress to the wires [0067].

15. With regard to claim 11, in figures 2 and 7A-C, Wang discloses an apparatus comprising: the energy converter (140); a translucent bulb (102) for shielding the energy

converter (140) from the air; and means (106, 147) for supplying electrical power to the heat source (141) included in the energy converter (140).

16. With regard to claim 12, in figures 2 and 7A-C, Wang discloses that the apparatus disclosed functions as an illumination source [0027-0029].

17. With regard to claim 13, in figures 7A-C, Wang discloses a radiation cut member (144) for cutting down infrared radiations, of which the wavelengths are longer than a predetermined wavelength [0041], wherein the radiation cut member (144) is a woven or knitted mesh of metal wires (145), openings of the woven or knitted mesh having an aperture size that is smaller than the predetermined wavelength [0058].

18. Claims 1-8, and 11-13 are rejected under 35 U.S.C. 102(b) as being anticipated by Perlo et al., WO 03/058676 A2.

19. With regard to claim 1, in figure 3, Perlo discloses an energy converter (6) comprising: a heat source (inner wires 6A) for emitting electromagnetic radiations; and a radiation cut portion (outer wires 6A) for cutting down infrared radiations, of which the wavelengths are longer than a predetermined wavelength (page 5, line 26 - page 6, line 1), wherein the radiation cut portion (outer wires 6A) is a woven or knitted mesh of metal wires (6A), openings of the woven or knitted mesh having an aperture size that is smaller than the predetermined wavelength (page 5, lines 20-25).

20. With regard to claim 2, in figure 3, Perlo discloses that the openings have a substantially square shape (page 5, lines 20-25), each side of which is shorter than 1 μm (page 5, lines 12-13).

21. With regard to claim 3, in figure 3, Perlo discloses that the metal wires (6A) have a diameter of 2 μm or less (page 5, lines 10-11).

22. With regard to claim 4, in figure 3, Perlo discloses that the metal wires (6A) are made of a refractory material (page 5, lines 8-10) having a melting point higher than 2,000 K (page 7, lines 3-5).

23. With regard to claim 5, in figure 3, Perlo discloses that the refractory material is at least one material selected from the group consisting of tungsten, molybdenum, rhenium, tantalum and compounds thereof (page 5, lines 8-10).

24. With regard to claim 6, in figure 3, Perlo discloses that the heat source is made of tungsten or a tungsten compound (page 5, lines 8-10) and operates at a temperature of 2,000 K or more (page 7, lines 3-5).

25. With regard to claim 7, in figure 3, Perlo discloses that the radiation cut portion (outer wires 6A) is a stack of woven or knitted metal wire (6A) meshes, and wherein the stack of woven or knitted meshes is thick enough to limit the emission of the electromagnetic radiations with the predetermined wavelength (page 5, line 20 – page 6, line 1).

26. With regard to claim 8, in figure 3, Perlo discloses that the predetermined wavelength is 780 nm (page 1, line 23 & page 6, lines 2-6, infrared is identified as above 780 nm).

27. With regard to claim 11, in figures 1 and 3, Perlo discloses an apparatus (1) comprising: an energy converter (6); a translucent bulb (2) for shielding the energy

converter (6) from the air; and means for supplying electrical power (3, 4, 5) to the heat source (inner wires 6A) included in the energy converter (6).

28. With regard to claim 12, in figures 1 and 3, Perlo discloses that the apparatus (1) functions as an illumination source (page 3, lines 3-5).

29. With regard to claim 13, in figure 3, Perlo discloses a radiation cut member (outer wires 6A) for cutting down infrared radiations (page 5), of which the wavelengths are longer than a predetermined wavelength (page 5, line 26 – page 6, line 1), wherein the radiation cut member (outer wires 6A) is a woven or knitted mesh of metal wires, openings of the woven or knitted mesh (page 5, lines 20-25) having an aperture size that is smaller than the predetermined wavelength (page 5, lines 12-13).

Claim Rejections - 35 USC § 103

30. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

31. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Perlo, in view of itself.

32. With regard to claim 9, the structural limitations therein are the same as those recited in claim 1, and those disclosed by Perlo above. Perlo does not expressly disclose a method of fabricating the device. However, one having ordinary skill in the art would recognize that manufacturing the energy converter device will comprise Applicant's steps of forming the device. Since only generic method steps and no

specific method steps are claimed, the structure disclosed in Perlo meets Applicant's recited method step limitations. Therefore, at the time of invention it would have been obvious to one having ordinary skill in the art to construct the energy converter device disclosed by Perlo with the method of claim 9, since the method steps are obvious in the light of the resultant structure.

Conclusion

33. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Lin et al., U.S. Patent No. 6,297,496 B1, Lin et al., U.S. Patent No. 6,414,332 B1, Gee et al., U.S. Patent No. 6,583,350 B1, Gee et al., U.S. Patent No. 6,611,085 B1, and Gee et al., U.S. Patent No. 6,869,330 B2.

34. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas A. Hollweg whose telephone number is (571) 270-1739. The examiner can normally be reached on Monday through Friday 7:30am-5:00pm E.S.T..

35. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel can be reached on (571) 272-2457. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

36. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/TH/

/Nimeshkumar Patel/
Supervisory Patent Examiner, Art Unit 2879